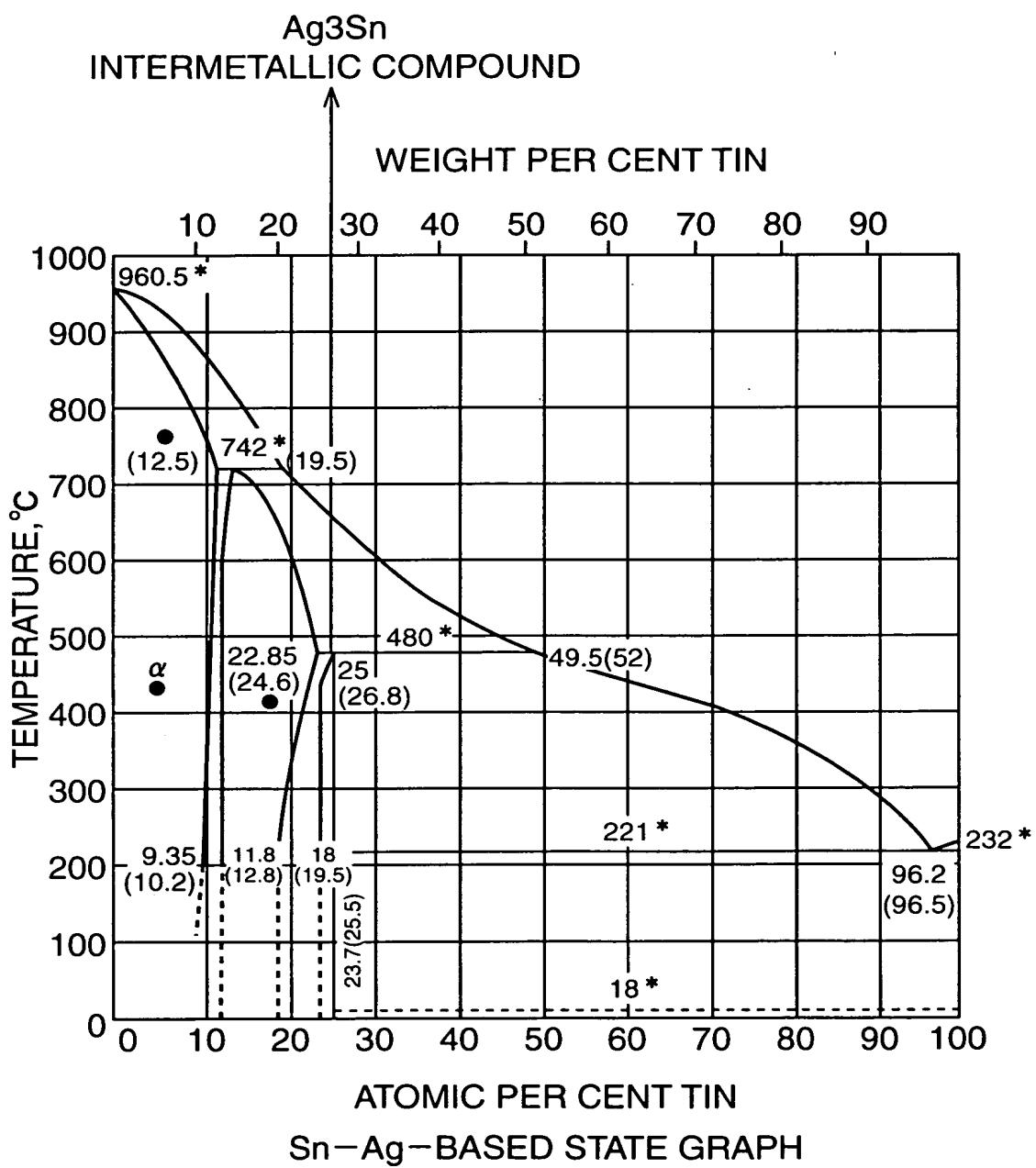
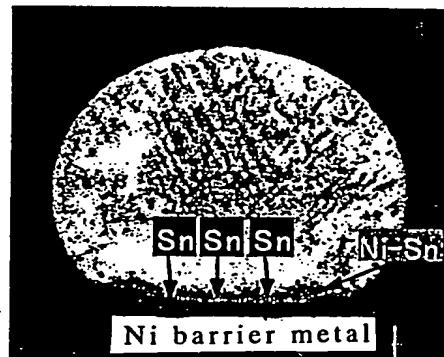


FIG. 1



F I G . 2



REACTION AT THE BONDING INTERFACE

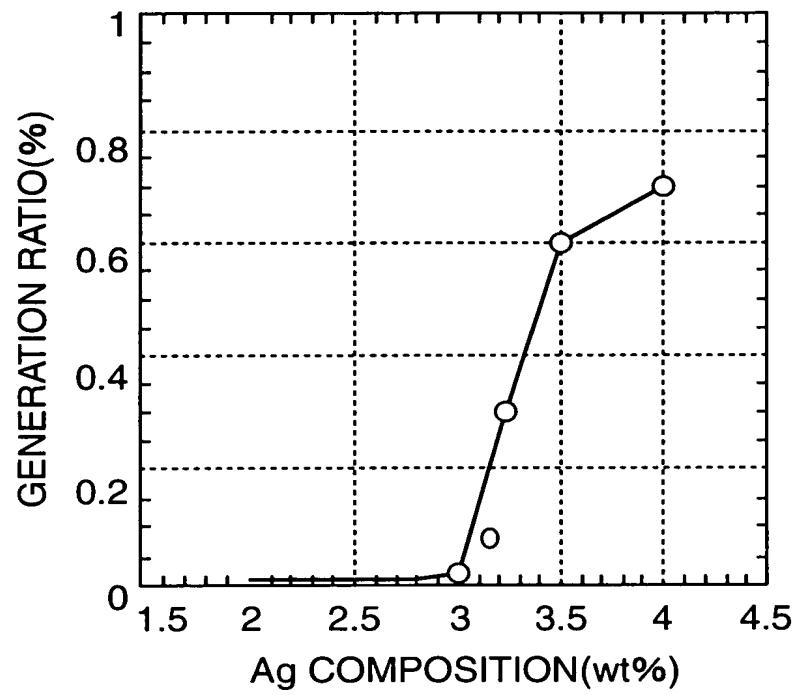
6 σ VALUE IS CALCULATED
FROM THE NORMAL DISTRIBUTION.

IN CONSIDERATION OF THE Sn REDUCTION
IN THE SOLDER MATERIAL AT BONDING.



UPPER LIMIT OF Ag COMPOSITION

FIG. 3



**PROJECTION SHAPE GENERATION RATIO IN THE SOLDER ALLOY
OF EACH Ag COMPOSITION**

FIG. 4A

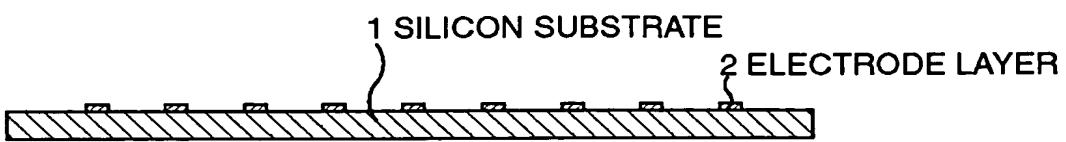


FIG. 4B



FIG. 4C



FIG. 4D

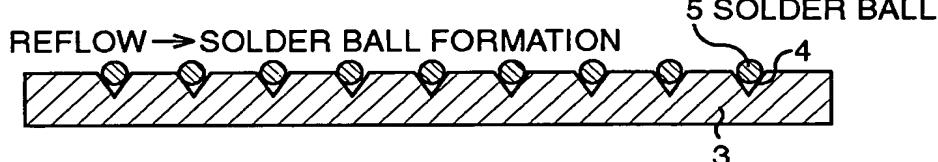


FIG. 4E

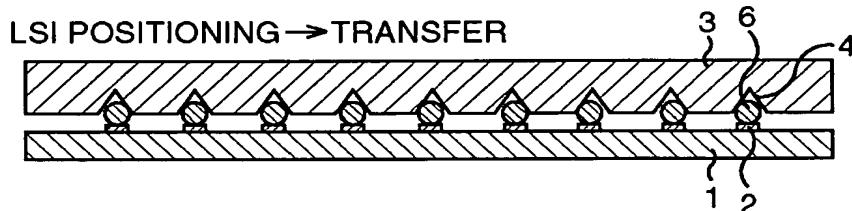


FIG. 4F

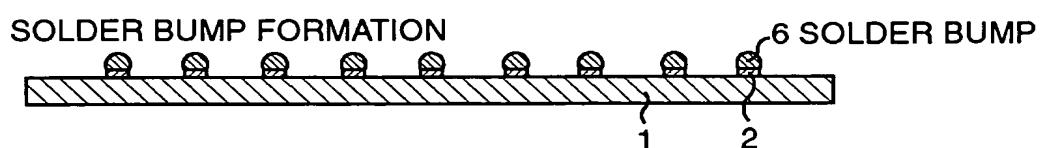
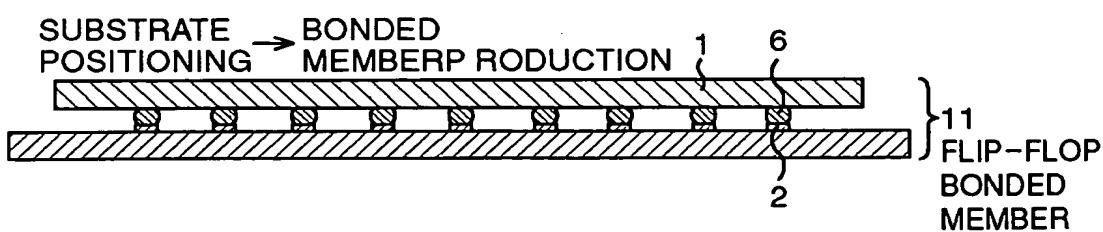


FIG. 4G



DIMPLE METHOD STEPS AND FLIP-CHIP BONDING STEPS

FIG. 5

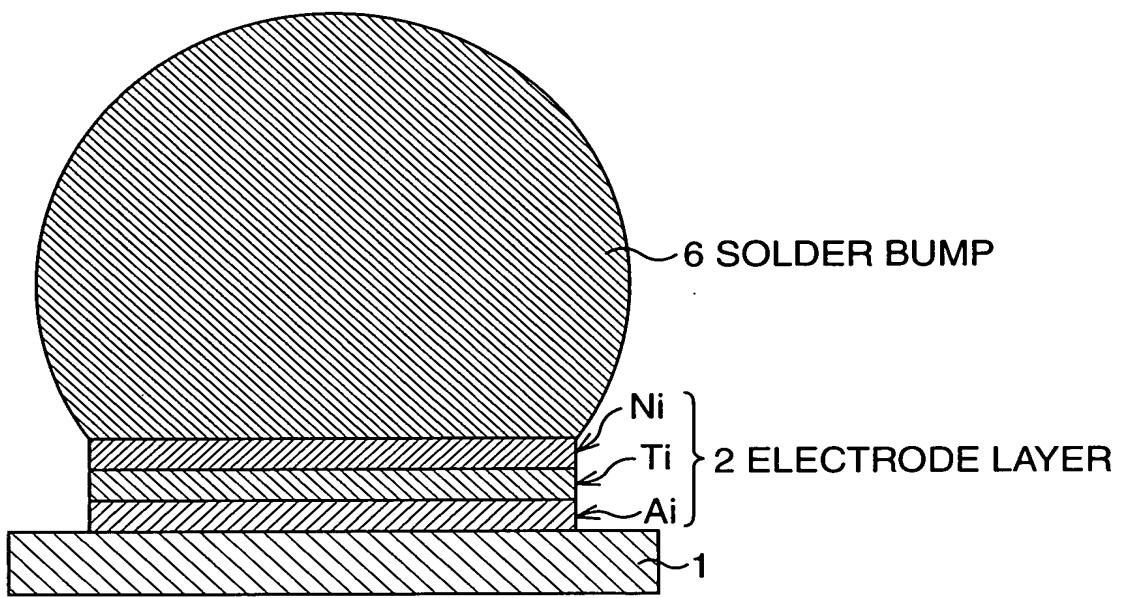
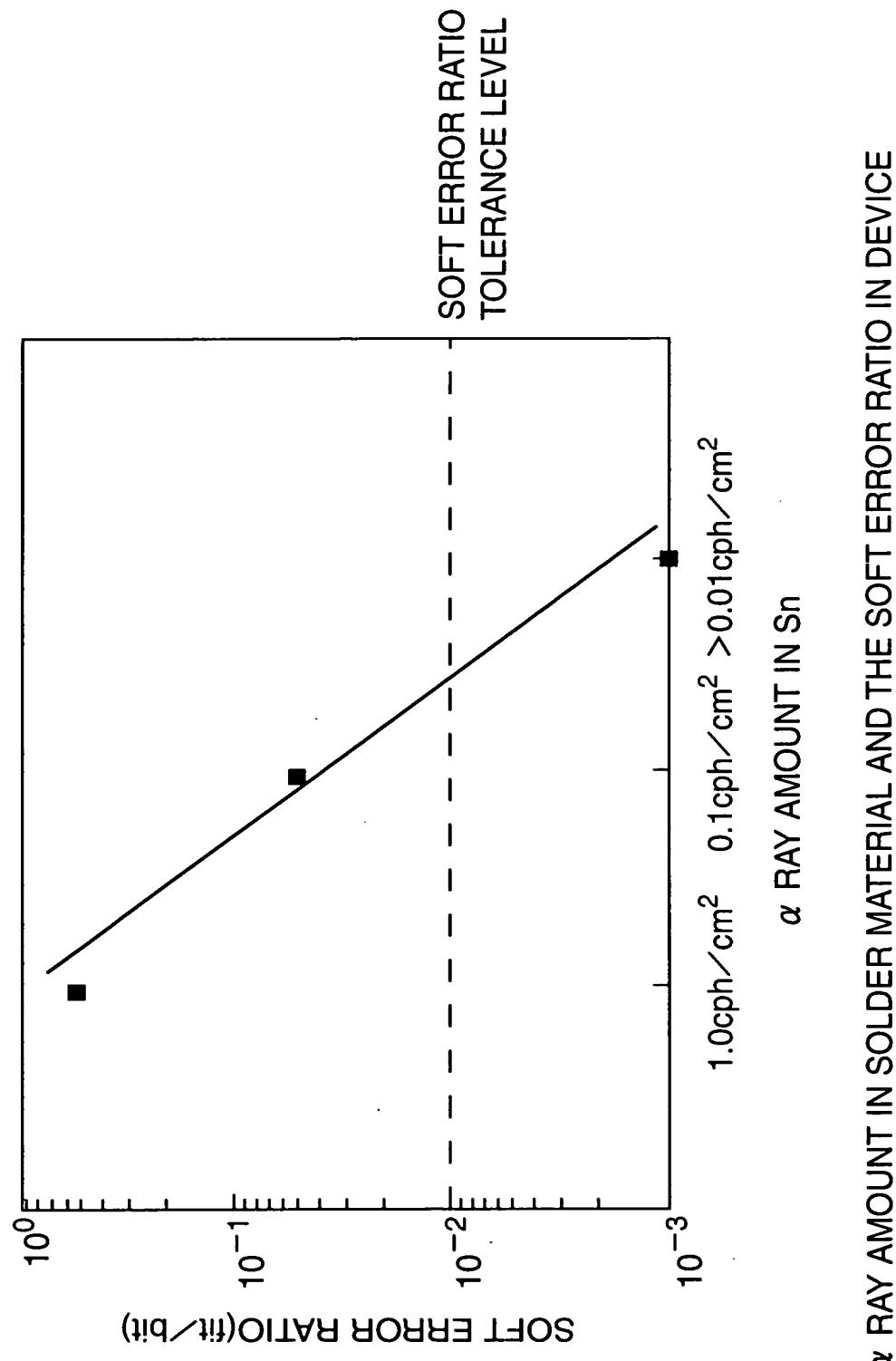
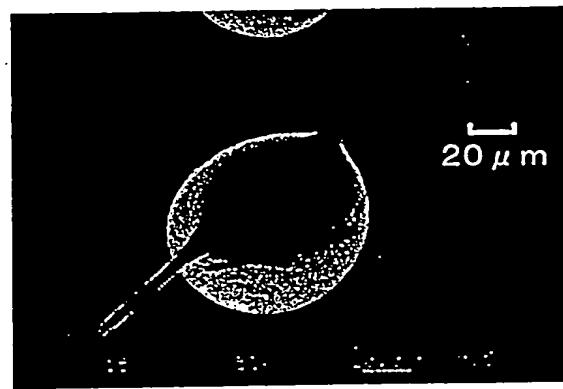


FIG. 6



F I G . 7



PROJECTION SHAPE